

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

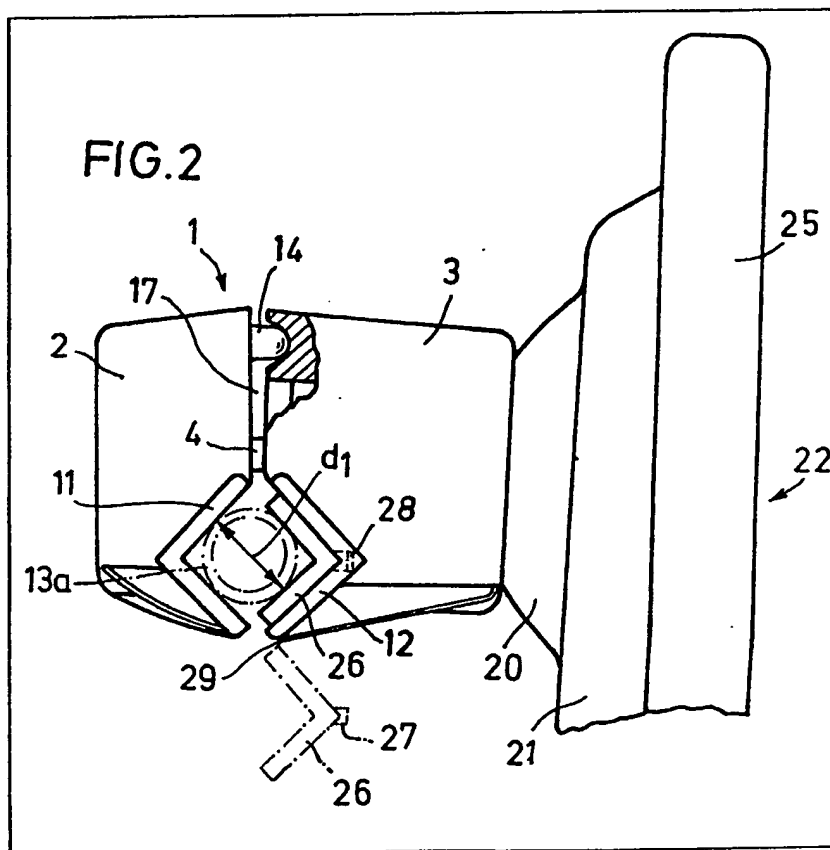
# (12) UK Patent Application (19) GB (11) 2 100 205 A

- (21) Application No 8213906  
(22) Date of filing 13 May 1982  
(30) Priority data  
(31) 8114023  
(32) 13 May 1981  
(33) Fed. Rep. of Germany (DE)  
(43) Application published  
22 Dec 1982  
(51) INT CL<sup>3</sup>  
B60R 1/06  
(52) Domestic classification  
B7J 69  
E2A 370 375 415 GEA  
(56) Documents cited  
GB 1249342  
GB 1587233  
(58) Field of search  
B7J  
B4W  
E2A  
(71) Applicants  
Metallwerk Frese GmbH,  
Moltkestrasse 25,  
D-5653 Leichlingen 1,  
Federal Republic of  
Germany  
(72) Inventors  
Dieter Ritsche,  
Udo Hummerich  
(74) Agents  
Elkington and Fife,  
High Holborn House,  
52-54 High Holborn,  
London WC1V 6SH

(54) A supporting head for exterior mirrors of lorries

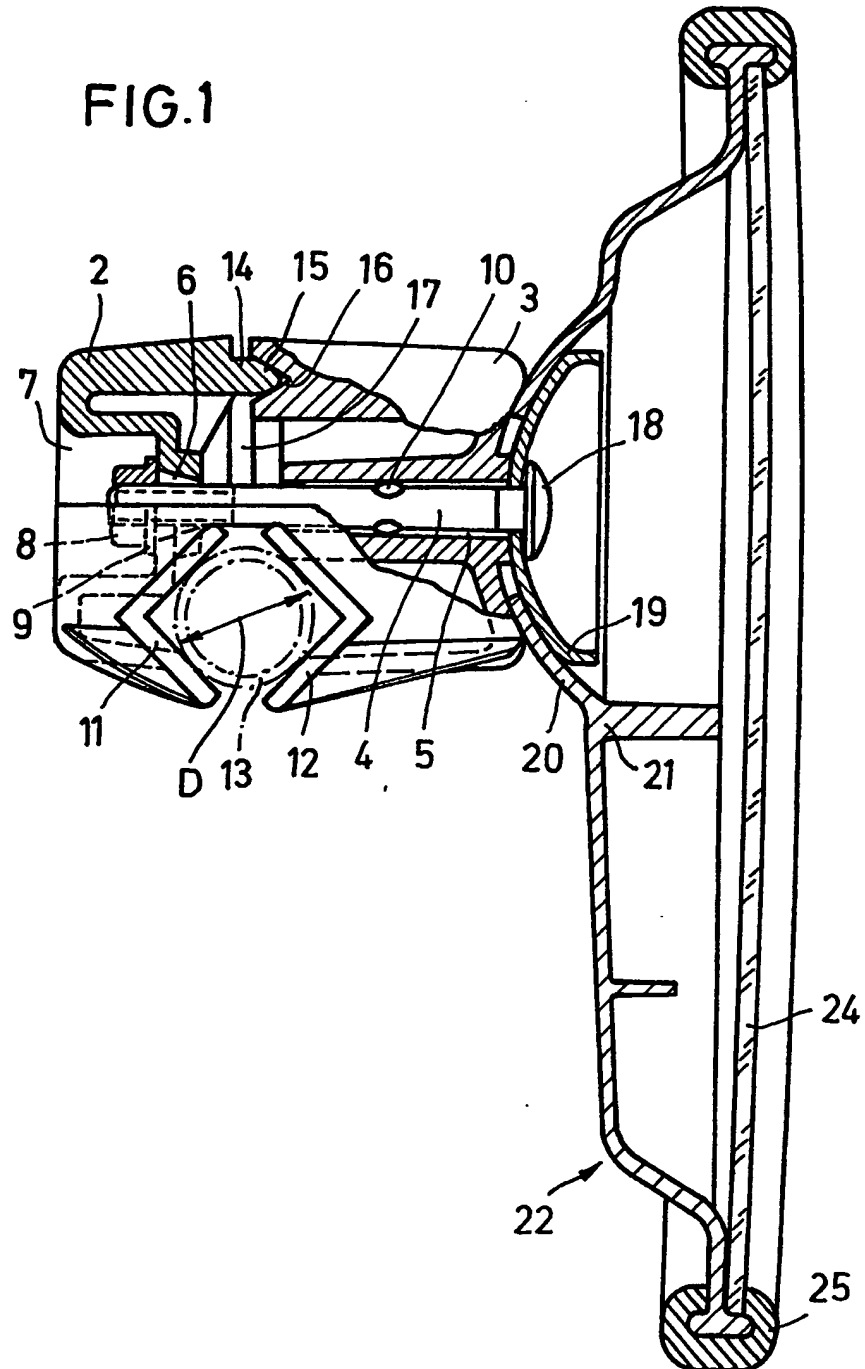
(57) A supporting head for exterior mirrors comprises two clamping pieces (2, 3) braced by a tightening bolt (4). Each clamping piece (2, 3) has a v-shaped clamping jaw (11, 12) into which inserts (26, 30) may be

positioned, to grip smaller supporting rods. The inserts (26, 30) are injection moulded from plastics in one piece with the clamping pieces (2, 3) or with the clamping jaws (11, 12). The inserts (26, 30) are joined to the relevant clamping pieces by thin bars (29) to be separated manually if not required.



GB 2 100 205 A

FIG.1





## SPECIFICATION

**A supporting head for exterior mirrors of lorries**

This invention relates to a supporting head for exterior mirrors of lorries which comprises two clamping jaws which may be tightened against each other in order to clamp the supporting head on a supporting rod.

The diameter of supporting rods for exterior mirrors which are present on different types of lorries vary, so that exterior mirrors having different supporting heads are often required for different types of lorries. Moreover, the known supporting heads are of a relatively complicated design, so that the production costs thereof are high, even if they are produced as injection moulded plastics parts.

The object of the present invention is to provide a supporting head for exterior mirrors of lorries which is of a simple design and is suitable for all types of lorry, even if the supporting rods thereof which are provided for the exterior mirror vary in diameter.

According to the present invention there is provided a supporting head for the exterior mirror of a lorry comprising two clamping pieces which may be clamped against each other, each clamping piece having a v-shaped clamping jaw for clamping the supporting head onto a supporting rod, and each clamping jaw having a v-shaped insert which is insertable into the jaw and is attached thereto in a captive but detachable manner.

Thus, the supporting head according to the present invention comprises two parts which are preferably to be produced by an injection moulding process and which may be clamped against each other, and each of which has a clamping jaw, the inside opening of the jaw being changeable or adjustable, depending on the diameter of the supporting rod on which the exterior mirror is to be positioned. For this purpose, a v-shaped insert is injection moulded on each clamping piece and it fits into the relevant clamping jaw. If the diameter of the supporting rod is too small for the inside diameter of the v-shaped clamping jaws one of the v-shaped inserts is each positioned either in one or in both clamping jaws and, for this purpose, the insert is torn off from the clamping piece, or it may also be positioned such that it may be pivoted into the clamping jaw. Inserts which are not required are torn off and thrown away.

Exterior mirrors having a supporting head of this type may be produced by the manufacturer, together with the optionally usable insertion pieces and may be easily installed by the user, according to the operational conditions. Fitting an exterior mirror which has a supporting head of this type does not require any particular technical knowledge so that the exterior mirror is suitable for first-time fitters and is also suitable as a replacement part.

According to a preferred embodiment of the present invention, the outside of each insert is

provided with a centre pin which fits into a corresponding opening in the relevant clamping jaw. This measure provides a join between the clamping jaw and the insert positioned therein, so that the insert cannot slip out of the jaw right up until the end of assembly. This is particularly important when the inserts have to be torn off for insertion into the relevant clamping jaws.

According to a preferred embodiment of the present invention, the clamping pieces are to be tightened against each other by a tightening bolt which is anchored in one clamping piece. The bolt is preferably anchored in this piece by the provision of projecting bosses or the like on the shaft of the bolt, which bosses are to be pressed into the wall of a hole in the clamping piece, i.e. their external diameter is slightly greater than the internal diameter of the hole, so that they fit tightly into the hole and at least slightly press into the inside wall thereof when the bolt is tightened.

According to another preferred feature of the present invention, one of the two clamping pieces is provided with a peg which acts as a tilting joint. The outer end of the peg is to be inserted into a recess in the other clamping piece, this outer end preferably being of a semi-spherical design. This peg keeps the two clamping pieces at a sufficient distance from each other in order to constantly ensure a clamping effect and that the two clamping pieces stay tilted towards each other to a greater or lesser extent when the bolt is tightened, depending on the diameter of the supporting rod to be held by the clamping jaws, or on the inserts positioned in the jaws.

An embodiment of the supporting head according to the present invention is described in detail below, by example only, with reference to the accompanying drawings, wherein:

Fig. 1 shows a partial section through the supporting head which is attached to a supporting rod of a relatively large diameter, with the exterior mirror positioned thereon;

Fig. 2 is a partly sectional side view of the supporting head which is clamped on a supporting rod of an average diameter; and

Fig. 3 is a side view of the supporting head which is clamped on a supporting rod of a relatively small diameter.

The supporting head 1 comprises two clamping pieces 2 and 3 which are to be braced together by a tightening bolt 4 which extends through both clamping pieces via holes 5 and 6 and on which a nut 8 is screwed inside a recess 7 of the clamping piece 2, which nut acts on the clamping piece 2 via a washer 9.

The shaft of the tightening bolt 4 is provided with projecting bosses 10 which are pressed out of the bolt and the highest points of which lie on a circular arc, the diameter of which is slightly greater than that of the hole 5, so that the bosses 10 rest firmly on the inside wall of the hole 5 and are optionally also worked into this wall.

Consequently, an at least force-fitting, lasting join is produced between the tightening bolt 4 and the clamping piece 3 when the supporting head is

mounted and the nut 8 is tightened.

Clamping pieces 2 and 3 have v-shaped clamping jaws 11 and 12 respectively, so that a supporting rod 13 attached to the lorry may be clamped between these jaws 11 and 12.

The inside of clamping piece 2 is provided with a projecting peg 14 which has a semi-spherical outer end 15. The end 15 fits into a recess 16 of the other clamping piece 3, so that the clamping pieces 2 and 3 are joined together by a type of tilting joint and are at a distance 17 from each other in order to allow a clamping movement of the jaws 11 and 12.

Under its head 18, the tightening bolt 4 holds a cap-shaped clamping plate 19 which rests on the inside of a part-spherical bulge 20 of the housing 21 of an exterior mirror 22 for a lorry, so that the supporting head 1 may be moved to the most appropriate position relative to the housing 21 during assembly. The bulge 20 is provided with an opening 23 for insertion of the bolt 4. The lower side of the clamping piece 3 is adapted to the spherical shape of the widening 20, so that a close fitting support of the head 1 on the housing 21 is ensured.

The exterior mirror 22 has a mirror disc 24 which is held on the housing 21 by a clamping ring 25.

According to Fig. 1, the supporting head 1 is clamped on a supporting rod 13 of a relatively large diameter D. Figs. 2 and 3 show that the supporting head 1 may also be clamped on supporting rods 13a and 13b of a smaller external diameter  $d_1$  and  $d_2$  respectively, even if the clamping distance which is pre-determined by the spacing 17 is not actually sufficient for this purpose.

Fig. 2 shows that in order to compensate for the smaller diameter  $d_1$  of the supporting rod 13a, a v-shaped insert 26 corresponding to the shape of the clamping jaw is inserted into one jaw, in this case jaw 12. The insert 26 has a pin 27 in its vertex region which pin may be inserted into an opening 28 of the clamping jaw 12 such that the insert 26 is held in the jaw and cannot slip out of the jaw before or after assembly. As indicated in Fig. 2 in dash-dotted lines, the insert 26 is injection-moulded from plastics in one piece with the clamping jaw 12 and is joined to the jaw 12 via a thin bar 29, so that when the parts of the supporting head 1 are delivered the insert 26 is joined in a captive manner to the clamping jaw 12. The insert 26 is torn off before assembly and is either inserted into the clamping jaw 12 or is thrown away if the supporting head 1 is to be positioned on a supporting rod 13 of a relatively large external diameter D.

Fig. 3 shows that a corresponding insert 30 may also be positioned inside the clamping jaw 11, if the supporting head 1 is to be positioned on a supporting rod 13b of a relatively small external diameter  $d_2$ . The insert 30 is also provided with a pin 27 which may be inserted into

an opening 28 in the clamping jaw 11.

Furthermore, the insert 30, like the insert 26, is joined to the clamping jaw 11 via a thin bar 29 when the parts of the supporting head 1 are delivered. Before assembly, the insert 30 is accordingly also torn off and is then, as shown in Fig. 3 either inserted into the clamping jaw 11 or thrown away if it is not required as an assembly aid, as illustrated in Figs. 1 and 2.

The inserts 26 and 30 may also be attached to the relevant clamping jaws 12 and 11 such that they may be positioned in the relevant jaw by being turned back and accordingly do not need to be separated for insertion into the relevant clamping jaw.

The supporting head 1 is delivered for assembly with the inserts 26 and 30 injection moulded thereon. Depending on the diameter of the supporting rod 13 provided on the lorry for attaching the exterior mirror 12, the inserts 26 and 30 are either positioned inside the relevant jaw or, if they are not required, are thrown away. Thus, the supporting head being of a simple design and produced from injection moulded parts may be assembled on supporting rods which vary in diameter and it is therefore suitable for different types of lorries. The individual parts of the supporting head are injection moulded parts which are of a relatively simple design and are to be joined together by a tightening bolt 4 which may be inserted through them and is thus to be secured in a captive manner. The tightening bolt 4 inserted into the inner clamping piece 3 does not fall out of this piece 3 even if the outer clamping piece 2 has not been attached and the nut 8 has not been tightened.

## 100 CLAIMS

1. A supporting head for the exterior mirror of a lorry comprising two clamping pieces which may be clamped against each other, each clamping piece having a v-shaped clamping jaw for clamping the supporting head onto a supporting rod and each clamping jaw having a v-shaped insert which is insertable into the jaw and is attached thereto in a captive but detachable manner.

2. A supporting head according to claim 1, wherein the outside of each insert has a pin which fits into an opening in the clamping jaw.

3. A supporting head according to claim 1 or 2, wherein the two clamping pieces can be tightened against each other by a tightening bolt which is anchored in one clamping piece.

4. A supporting head according to claim 3 wherein the shaft of the tightening bolt has projecting bosses which are to be pressed into the wall of a hole through one clamping piece.

5. A supporting head according to any one of claims 1 to 4 wherein one of the two clamping pieces is provided with a peg which acts as a tilting joint and the outer end of which may be inserted into a recess in the other clamping piece.

6. A supporting head according to claim 5 wherein the outer end of the peg is of a semi-spherical form.

7. A supporting head for the exterior mirror of a lorry, substantially as herein described with reference to the accompanying drawings.

---

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1982. Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained